

§ 157.124

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§ 157.124 COW tank washing machines.

(a) COW machines must be permanently mounted in each cargo tank.

(b) The COW machines in each tank must have sufficient nozzles with the proper diameter, working pressure, movement, and timing to allow the tank vessel to pass the inspections under § 157.140.

(c) Each COW machine and its supply piping must be supported to withstand vibration and pressure surges.

(d) There must be one portable drive unit available on board the vessel for every three COW machines that use portable drive units during COW operations required by § 157.160 before each ballast voyage.

(e) Except as allowed in paragraph (f) of this section, each cargo tank must have COW machines located to wash all horizontal and vertical areas of the tank by direct impingement, jet deflection, or splashing to allow the tank vessel to pass the inspections under § 157.140. The following areas in each tank must not be shielded from direct impingement by large primary structural members or any other structural member determined to be equivalent to a large primary structural member by the Commandant when reviewing the plans submitted under § 157.100 or § 157.102:

(1) 90 percent or more of the total horizontal area of the:

- (i) Tank bottom;
- (ii) Upper surfaces of large primary structural members; and
- (iii) Upper surfaces of any other structural member determined to be equivalent to a large primary structural member by the Commandant.

(2) 85 percent or more of the total vertical area of the tank sides and swash bulkheads.

(f) Each cargo tank on a vessel having a COW system under § 157.10a(a)(2) or § 157.10c(b)(2) with complicated internal structural members does not have to meet paragraph (e) of this section if the following areas of each cargo tank are washed by direct impingement and the tank vessel can pass the inspections under § 157.140:

(1) 90 percent or more of the total horizontal area of all the:

- (i) Tank bottoms;

(ii) Upper surfaces of large primary structural members; and

(iii) Upper surfaces of any other structural member determined to be equivalent to a large primary structural member by the Commandant.

(2) 85 percent or more of the total vertical area of all the tank sides and swash bulkheads.

(g) Each single nozzle COW machine that is mounted to the deck must have a means located outside of the cargo tank that indicates the arc and rotation of the movement of the COW machine during COW operations.

(h) Each multi-nozzle COW machine that is mounted to the deck must have a means located outside of the cargo tank that indicates the movement of the COW machine during COW operations.

(i) Each COW machine mounted to or close to the bottom of a tank without a means located outside of the cargo tank that indicates movement of the machine must not be programmable.

NOTES: 1. In the calculations to meet § 157.124 (e) or (f), areas that are shielded from direct impingement by structural members other than large primary structural members or swash bulkheads can be calculated as areas being washed by direct impingement.

2. One or more types of COW machines could be used to meet § 157.124 (e) or (f).

[CGD 77–058b, 45 FR 43709, June 30, 1980, as amended by CGD 82–28, 50 FR 11627, Mar. 22, 1985]

§ 157.126 Pumps.

(a) Crude oil must be supplied to the COW machines by COW system pumps or cargo pumps.

(b) The pumps under paragraph (a) of this section must be designed and arranged with sufficient capacity to meet the following:

(1) A sufficient pressure and flow is supplied to allow the simultaneous operation of those COW machines designed to operate simultaneously.

(2) If an eductor is used for tank stripping, enough driving fluid is provided by the pumps to allow the eductor to meet § 157.128(a).

(c) There must be means on the tank vessel to maintain the pressure under paragraph (b) of this section when shore terminal back pressure is less